

MICROBE DETECTION & PHYSIOLOGY

CENTER

The focus of this center is the development of technologies that lead to the real time detection of pathogenic micro-organisms. This involves the development of novel pathogen capture molecules, platform development, prototype development, and commercialization. Industries where this technology is useful include pharmaceuticals, biomedicine, biotechnology, veterinary, production agriculture, food processing, public health, defense, and water and sewage treatment.

TECHNOLOGY

The primary focus of the Center is bacterial detection, but other targets are also investigated. To date, four technologies have been developed: ImmunoFlow, ImmunoDNA, GlycoBind, and TissueTag. Each technology has a unique use and application, but is not limited to a single type of use. For example, ImmunoFlow has many fields of use ranging from water to air, and has the potential to detect many types of bacteria. Initial prototypes are available for *Bacillus globgii* spores, *Lactobacillus*, *Salmonella* and *E. coli* O157 cells. Each type of assay has a maximum detection time of 30 minutes with a sensitivity of less than 10 cells. A unique feature of each technology is that it is volume independent; both large (tens of liters) and small (1 to 100 milliliters) samples are commonly used. Each technology is at a different stage of development, with ImmunoFlow being the most developed.

UTAH STATE UNIVERSITY

Can you imagine....

Being able to detect less than 10 cells of a harmful pathogen, such as salmonella or *E. coli*, in a quart of milk, within 30 minutes?



ACCOMPLISHMENTS

The Center has licensed the ImmunoFlow technology to Stellar Technologies, and is ready to proceed with alpha and beta testing. A new company was formed (BioMatrix Solutions) to produce and market ImmunoFlow under the name of LumiFlow. Initial marketing efforts are being directed to the food and beverage industry.

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